

### REMARKS

Claims 1-7, 9, 11-19, 21, 23-26, 28, and 30-38 are pending. Claims 8, 10, 20, 22, 27, 29 have been canceled without prejudice. Claims 1, 4, 6, 11, 12, 14, 23, and 24 have been amended. New claims 31-38 have been added. No new matter has been introduced. Reexamination and reconsideration of the present application are respectfully requested.

As requested in the accompanying Change of Address Notice, please direct all future communications regarding this application to: Roger R. Wise, PILLSBURY WINTHROP LLP, 725 S. Figueroa Street, Suite 2800, Los Angeles, CA 90017-5406, telephone (213) 488-7100, facsimile (213) 629-1033.

In the May 9, 2003 Office Action, the Examiner rejected claims 1-30. The Examiner objected to the Abstract of the Disclosure as not being narrative. The Examiner objected to the content of the Specification as not having a Brief Summary of the Invention. The Examiner objected to claim 4 due to informalities. The Examiner rejected claims 1-12, 14, 15, and 20-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,742,521 to Ellenby (the Ellenby reference). The Examiner rejected claims 13, 16-19, and 23-30 under 35 U.S.C. § 103(a) as being obvious over the Ellenby reference, in view of U.S. Patent Application Publication No. 2002/0112237 to Kelts (the Kelts reference). These rejections are respectfully traversed.

Applicant respectfully submits that a Brief Summary of the Invention is not required under the patent laws, rules, or the Manual of Patent Examining Procedure (MPEP). Rule 77(b) of the C.F.R. only provides a sample format of the contents of a patent application specification, but it does not specifically state that the Summary of

the Invention section is required. Moreover, referring to the U.S. Patent Office Electronic Filing System (EFS) Authoring Manual PASAT (Version 4, Fall 2001), at page 70, the Summary of the Invention is indicated as being "optional". Applicant has amended the Specification to indicate that the Brief Summary of the Invention is "Not Applicable". Accordingly, it is respectfully submitted that the objection to the Specification be withdrawn.

The present invention relates to an automatic statistics generation and management system. The system includes a head-end system to receive video input data of a sporting event and to generate in real-time semantic information and geometric information without input from an operator. A statistics generation system is provided to generate sporting statistics based on at least one of the semantic information and the geometric information received from the head-end system. And, a statistics management system stores and manages the sporting statistics received from the statistics generation system.

Independent claim 1, as amended, recites:

receiving video input data of a sporting event;  
*generating in real-time semantic information and geometric information based on the video input data without input from an operator, wherein the semantic information and the geometric information generated are textual information, and the semantic information includes event model information; and*  
generating sporting statistics based on at least one of the semantic information and the geometric information.

The Ellenby reference is directed to a optical system that utilizes a computer

generated image that is merged with an image of a real scene such that a composite image is presented in a proper perspective and aligned to the real scene as the scene is viewed from the location of a user. The optical system includes a camera for collecting an image, a computer, a data store that is responsive to a position determining means and an attitude determining means, and a display for presenting an augmented image to the user.

The Ellenby reference does not disclose, teach, or suggest the method of independent claim 1, as amended. Unlike independent claim 1, as amended, the Ellenby reference does not disclose *generating in real-time semantic information and geometric information based on the video input data without input from an operator*, wherein the *semantic information and the geometric information generated are textual information*, and the *semantic information includes event model information*. The optical system of the Ellenby reference retrieves data from an "Action Data System" that requires constant attention by an operator in order to identify elements within an image for the Action Data System to process (col. 7, lines 29 to col. 8, line 40). On the other hand, the method of independent claim 1, as amended, differs from the Ellenby reference because it generates in real-time semantic information and geometric information based on the video input data *without input from an operator*.

Moreover, the Ellenby reference does not mention that the *semantic information and the geometric information generated are textual information*, and the *semantic information includes event model information*, as recited in independent claim 1, as amended. Data that is saved by the system of the Ellenby reference are image data only, such as photos taking during a game (col. 5, lines 26-30), and there is no

*generating in real-time semantic information and geometric information based on the video input data, wherein the semantic information and the geometric information generated are textual information*, as recited in independent claim 1, as amended. Additionally, the Ellenby reference does not utilize *semantic information* that includes *event model information*, e.g., descriptions of semantically significant actions, interactions, and consequences in a sporting event (see Specification, page 6), as recited in independent claim 1, as amended. The Ellenby reference only shows that special information, such as historic and statistical information, may be provided to a user via the optical system (col. 11, lines 7-10), but there is no teaching in the Ellenby reference as to how this information is obtained or determined, and there is no *generating in real-time semantic information and geometric information based on the video input data without input from an operator*, wherein the *semantic information and the geometric information generated are textual information*, and the *semantic information includes event model information*, as recited in independent claim 1, as amended. In fact, information is actually pre-stored in a database in the Ellenby reference (col. 9, lines 26-33); and the method of independent claim 1, as amended, differs from the Ellenby reference because it is *generating in real-time semantic information and geometric information based on the video input data without input from an operator*. Accordingly, applicant respectfully submits that independent claim 1, as amended, distinguishes over the Ellenby reference.

The Kelts reference does not make up for the deficiencies of the Ellenby reference. The Kelts reference is directed to interactive menu interfaces for identifying content provided via a communication system, a computer system, or other electronic

equipment. In particular, the Kelts reference is directed to a system for retrieving programming information and for generating an interactive navigation interface for displaying such programming information.

The Kelts reference does not disclose, teach, or suggest the method of independent claim 1, as amended. Unlike independent claim 1, as amended, the Kelts reference does not make any mention of *generating in real-time semantic information and geometric information based on the video input data without input from an operator*, wherein the *semantic information and the geometric information generated are textual information*, and the *semantic information includes event model information*. The Kelts reference only discloses that a gateway server may be configured to communicate wirelessly with a PDA device (paragraph No. 0152; and Fig. 9). Accordingly, applicant respectfully submits that independent claim 1, as amended, distinguishes over the above-cited references.

Independent claims 11 and 23, both as amended, recite limitations similar to independent claim 1, as amended. New independent claim 31 recites limitations similar to independent claim 1, as amended. Claims 2-7 and 9 all directly depend from independent claim 1, as amended. Claims 12-19 and 21 all depend, directly or indirectly, from independent claim 11, as amended. Claims 24-26, 28, and 30 all directly depend from independent claim 23, as amended. New claims 32-38 all directly depend from new independent claim 31. Accordingly, applicant respectfully submits that claims 2-7, 9, 11-19, 21, 23-26, 28, and 30-38 distinguish over the above-cited references for the reasons set forth above with respect to independent claim 1, as amended.

Applicant believes that the foregoing amendments place the application in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call either of the undersigned attorneys at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.

Respectfully submitted,

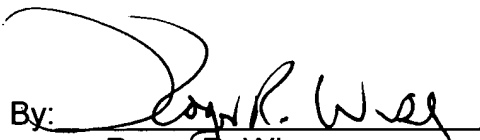
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## APPENDIX

### **VERSION WITH MARKINGS TO SHOW CHANGES MADE**

#### IN THE ABSTRACT OF THE DISCLOSURE:

Please replace the Abstract of the Disclosure starting on page 19, line 1 with the following paragraph:

An automatic statistics generation and management system includes a head-end system to receive input data of a sporting event and to generate semantic information and geometric information. A statistics generation system is provided to generate sporting statistics based on at least one of the semantic information and the geometric information received from the head-end system. And, a statistics management system stores and manages the sporting statistics received from the statistics generation system. The automatic statistics generation and management system requires little or no human interaction to provide and maintain accurate results.

#### IN THE SPECIFICATION:

Please insert the following paragraph starting on page 2, line 11:

#### BRIEF SUMMARY OF THE INVENTION

Not Applicable

#### IN THE CLAIMS:

Please cancel claims 8, 10, 20, 22, 27, 29 without prejudice; amend claims 1, 4, 6, 11, 12, 14, 23, and 24; and add new claims 31-38 as follows:

1. (Amended) A method of automatic statistics generation and management, comprising:

receiving video input data of a sporting event;  
generating in real-time semantic information and geometric [model]  
information based on the video input data without input from an operator,  
wherein the semantic information and the geometric information generated are  
textual information, and the semantic information includes event model  
information; and  
generating sporting statistics based on at least one of the semantic  
information and the geometric information.

4. (Amended) The method according to claim 1, further including providing  
the video input data from at least one video camera located at the sporting event.

6. (Amended) The method according to claim 1, further including:  
processing the video input data to generate tracking information; and  
processing the tracking information to generate the semantic information  
and the geometric information.

11. (Amended) An automatic statistics generation and management system,  
comprising:

a head-end system to receive video input data of a sporting event and to  
generate in real-time semantic information and geometric information based on  
the video input data without input from an operator, wherein the semantic



information and the geometric information generated are textual information, and the semantic information includes event model information;

a statistics generation system to generate sporting statistics[.] based on at least one of the semantic information and the geometric information received from the head-end system; and

a statistics management system to store and manage the sporting statistics received from the statistics generation system.

12. (Amended) The system according to claim 11, further including at least one video camera, located at the sporting event, to provide the video input data to the head-end system.

14. (Amended) The system according to claim 11, wherein the head-end system includes:

a tracking system to receive and process the video input data to generate tracking information; and

a production system to receive and process the tracking information to generate the semantic information and the geometric information.

23. (Amended) An automatic statistics generation and management system, comprising:

a head-end system including a tracking system to receive and process video input data of a sporting event to generate tracking information, and a

production system to receive and process the tracking information to generate in real-time semantic information and geometric information based on the video input data without input from an operator, wherein the semantic information and the geometric information generated are textual information, and the semantic information includes event model information, and the semantic information includes event model information;

a statistics generation system including a model manager to receive and access the semantic information and the geometric information, and a statistics generator to receive and process at least one of the semantic information and the geometric information to generate sporting statistics; and

a statistics management system having a statistics database to store and manage the sporting statistics, and a data miner to extract and analyze the sporting statistics stored in the statistics database.

24. (Amended) The system according to claim 23, further including at least one video camera, located at the sporting event, to provide the video input data to the head-end system.

Please add new claims 31-38.